09/743111

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

REQUEST FOR FILING NATIONAL PHASE OF PCT APPLICATION UNDER 35 U.S.C. 371 AND 37 CFR 1.494 OR 1.495

To: Hon. Commissioner of Patents
Washington, D.C. 20231

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

Atty Dkt: PM 275447 /C94.03/Q
M# /Client Ref.

From: Pillsbury Madison & Sutro LLP, IP Group:

Date: January 5, 2001

This is a **REQUEST** for **FILING** a PCT/USA National Phase Application based on:

1. International Application	2. International Filing Date	3. Earliest Priority Date Claimed
PCT/GB99/02013	06 JUL 1999	07 JUL 1998
⇧ country code	Day MONTH Year	Day MONTH Year
		(use item 2 if no earlier priority)

4. Measured from the earliest priority date in item 3, this PCT/USA National Phase Application Request is being filed within:

(a) ☐ 20 months from above item 3 date (b) ☒ 30 months from above item 3 date,

(c) Therefore, the due date (unextendable) is January 7, 2001

5. Title of Invention PERFUME COMPOSITION

6. Inventor(s) WILSON, Craig et al

Applicant herewith submits the following under 35 U.S.C. 371 to effect filing:

7. ☒ Please immediately start national examination procedures (35 U.S.C. 371 (f)).

8. ☒ **A copy of the International Application** as filed (35 U.S.C. 371(c)(2)) is transmitted herewith (file if in English but, if in foreign language, file only if not transmitted to PTO by the International Bureau) including:

a. ☒ Request;
b. ☒ Abstract;
c. 13 pgs. Spec. and Claims;
d. _____ sheet(s) Drawing which are ☐ informal ☐ formal of size ☐ A4 ☐ 11"

9. ☒ **A copy of the International Application has been transmitted by the International Bureau.**

10. **A translation of the International Application** into English (35 U.S.C. 371(c)(2))
a. ☐ is transmitted herewith including: (1) ☐ Request; (2) ☐ Abstract;
(3) _____ pgs. Spec. and Claims;
(4) _____ sheet(s) Drawing which are:
☐ informal ☐ formal of size ☐ A4 ☐ 11"
b. ☐ is not required, as the application was filed in English.
c. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd.
d. ☐ Translation verification attached (not required now).

11. ☒ **PLEASE AMEND** the specification before its first line by inserting as a separate paragraph:
a. ☒ --This application is the national phase of international application PCT/GB99/02013 filed July 6, 1999 which designated the U.S, and that international application ☒ was ☐ was not published under PCT Article 21(2) in English.--
b. ☐ --This application also claims the benefit of U.S. Provisional Application No. 60/ _____, filed _____ .--

RE: USA National Filing of PCT /GB99/02013

12. ☐ Amendments to the claims of the International Application **under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., before 18th month from first priority date above in item 3, are transmitted herewith (file only if in English) including:**

13. ☒ PCT Article 19 claim amendments (if any) have been transmitted by the International Bureau

14. ☐ Translation of the amendments to the claims **under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., of claim amendments** made before 18th month, **is attached (required by 20th month from the date in item 3 if box 4(a) above is X'd, or 30th month if box 4(b) is X'd, or else amendments will be considered canceled).**

15. **A declaration of the inventor** (35 U.S.C. 371(c)(4))
a. ☒ is submitted herewith ☒ Original ☐ Facsimile/Copy
b. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd.

16. **An International Search Report (ISR):**
a. Was prepared by ☒ European Patent Office ☐ Japanese Patent Office ☐ Other
b. ☒ has been transmitted by the international Bureau to PTO.
c. ☒ copy herewith (3 pg(s).) ☒ plus Annex of family members (1 pg(s).).

17. **International Preliminary Examination Report** (IPER):
a. ☒ has been transmitted (if this letter is filed after 28 months from date in item 3) in English by the International Bureau with Annexes (if any) in original language.
b. ☒ copy herewith in English.
c.1 ☒ IPER Annex(es) in original language ("Annexes" are amendments made to claims/spec/drawings during Examination) including attached amended:
c.2 ☐ Specification/claim pages #13-14 claims #part of 9, 10-14
Dwg Sheets #
d. ☐ Translation of Annex(es) to IPER **(required by 30th month due date, or else annexed amendments will be considered canceled).**

18. **Information Disclosure Statement** including:
a. ☒ Attached Form PTO-1449 listing documents
b. ☒ Attached copies of documents listed on Form PTO-1449
c. ☒ A concise explanation of relevance of ISR references is given in the ISR.

19. ☒ **Assignment** document and Cover Sheet for recording are attached. Please mail the recorded assignment document back to the person whose signature, name and address appear at the end of this letter.

20. ☐ Copy of Power to IA agent.

21. ☐ **Drawings** (complete only if 8d or 10a(4) not completed): ___ sheet(s) per set: ☐ 1 set informal; ☐ Formal of size ☐ A4 ☐ 11"

22. Small Entity Status ⌀ ☒ is **Not** claimed ☐ is claimed (**pre**-filing confirmation required)
22(a) _____ (No.) Small Entity Statement(s) enclosed (since 9/8/00 Small Entity Statements(s) not essential to make claim)

23. **Priority** is hereby claimed under 35 U.S.C. 119/365 based on the priority claim and the certified copy, both filed in the International Application during the international stage based on the filing in (country) Great Britain of:

	Application No.	Filing Date		Application No.	Filing Date
(1)	9814648.3	07 JUL 1998	(2)		
(3)			(4)		
(5)			(6)		

a. ☒ See Form PCT/IB/304 sent to US/DO with copy of priority documents. If copy has not been received, please proceed promptly to obtain same from the IB.
b. ☒ Copy of Form PCT/IB/304 attached.

24. Attached:

RE: USA National Filing of PCT/GB99/02013

25. **Preliminary Amendment:**

25.5 Per Item 17.c2, **cancel original** pages #_____, claims #_____, Drawing Sheets #

26. **Calculation of the U.S. National Fee (35 U.S.C. 371 (c)(1)) and other fees is as follows:**
Based on amended claim(s) per above item(s) ☐ 12, ☐ 14, ☒ 17, ☐ 25, ☐ 25.5 (hilite)

Total Effective Claims	14	minus 20 =	0	x $18/$9 =	$0	966/967
Independent Claims	8	minus 3 =	5	x $80/$40 =	$400	964/965
If any proper (ignore improper) Multiple Dependent claim is present,				add$270/$135	+0	968/969

BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(4)): →→ **BASIC FEE REQUIRED, NOW** →→→→

A. If country code letters in item 1 are **not** "US","BR","BB","TT","MX","IL" "NZ", "IN" or "ZA"

See item 16 re:

1.	Search Report was not prepared by EPO or JPO - - - - - - - - -	add$1000/$500	960/961
2.	Search Report was prepared by EPO or JPO - - - - - - - - - - - -	add$860/$430 +860	970/971

SKIP B, C, D AND E UNLESS country code letters in item 1 are "US","BR","BB","TT","MX","IL", "NZ", "IN" or "ZA"

(X) →	☐ B.	If USPTO did not issue both International Search Report (ISR) and (if box 4(b) above is X'd) the International Examination Report (IPER), - - - - - - - - - - - - - - - - - - -	add$970/$485 +0	960/961
(only) (one) → (of)	☐ C.	If USPTO issued ISR but not IPER (or box 4(a) above is X'd), -	add$710/$355 +0	958/959
(these) (4) → (boxes)	☐ D.	If USPTO issued IPER but IPER Sec. V boxes not all 3 YES, -	add$690/$345 +0	956/957
→	☐ E.	If international preliminary examination fee was paid to USPTO and Rules 492(a)(4) and 496(b) satisfied (IPER Sec. V all 3 boxes YES for all claims), - - - - - - - - - - - - -	add $100/$50 +0	962/963

27. **SUBTOTAL =** $1260

28. If Assignment box 19 above is X'd, add Assignment Recording fee of ----$40 +40 (581)

29. Attached is a check to cover the - **TOTAL FEES** $1300

Our Deposit Account No. 03-3975
Our Order No. 41301 (C#) | 275447 (M#)

CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 and 492 (missing or insufficient fee only) now or hereafter relative to this application and the resulting Official document under Rule 20, or credit any overpayment, to our Account/Order Nos. shown above for which purpose a duplicate copy of this sheet is attached.
This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal form is filed

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PERFUME COMPOSITION

The invention relates to a perfume composition containing perfume component(s) which is capable of sub-lethally reducing or preventing body malodour produced from perspiration moisture materials by members of the skin microflora, ie without killing significant numbers of the bacteria present on the skin surface.

Body odour results from the microbial transformation of organic molecules both simple and complex which are constituents of sweat. As well as the pungent undesirable odour that is produced by these reactions some of the by-products may, in some cases cause irritation to the skin.

It has been suggested in the prior art that body odour can be reduced by using various different materials, for example;

1) Astringent agents such as aluminium salts e.g. aluminium chlorohydrate. These components work by reducing or stopping the secretion of perspiration. However these actives denaturze skin proteins, and may alter the thermal balance of the armpit.

2) The topical application of antimicrobial substances to the skin. Bactericidal agents e.g. ethanol are a non specific mechanism of controlling body odour which as a result kill without any degree of discrimination of the micro-organisms present on the skin. Organisms that are not responsible for malodour are killed to the same extent or worse than their malodorous counterparts.

3) Perfumes may be applied to mask the odour, but new generation perfumes have been disclosed which exhibit an active deodorant effect on the underarm skin flora. EP-B-3172, EP-A-5618, US-A-43044679, US-A-4322308, US-A-4278658, US-A-4134838, US-A-4288341 and US-A-4289641 all describe perfume compositions which exhibit a deodorant action when applied to human skin, or when included in a laundry product used to launder textiles.

The present generation of deodorants offer protection against body malodour by reducing the numbers of the bacterial microflora considerably without any degree of selective discrimination.

Coryneform bacteria found on human skin have been shown to carry out the incomplete biotransformation of organic molecules secreted in human sweat. Leyden. J.J.et al, "The microbiology of human axilla and its relationship to axillary odour", J. of Invest. Derm., 77(1981), 413-416. Coryneform bacteria have also been shown to be responsible for the production of various odorous metabolites. J. Soc. Cosmet. Chem., 34 (1982), 193-202.

The present invention is directed to a perfume composition and the use thereof to retard or inhibit the production of malodorous compounds produced, for example by coryneform bacteria present on the skin surface, preferably without killing significant numbers of the bacteria, and/or other members of the skin microflora.

Accordingly, the present invention provides a perfume composition comprising at least 30% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%.

The invention further provides a perfume composition comprising at least 30% by weight of one or more of the following perfume components; (Z)-3,4,5,6,6-pentamethylhept-3-en-2-one, 2,6,10-trimethylundec-9-enal, 1-(4-Methoxyphenyl)-1-propene,diethylcyclohex-2-en-1-one, dimethyl cyclohex-2-en-1-one, Basil comores, 2-methyl-5-(1-methyl-1-ethenyl)-2-cyclohexen-1- one, Cis-3-hexenyl salicylate, methyl 3,3-dimethylbicyclo(2.2.1)heptane-2-carboxylate, Citronellol, Corriander, 2-methyl-3-(4-(1-methylethyl)phenyl)propanal, 1-(2,6,6-trimethyl-1,3-cyclohexadienyl) -2-buten-1-one, Dihydrojasmone, alpha,alpha-Dimethylphenylethylacetate, Dimethyl anthranilate, 1-(2-((1-(ethyloxy)ethyl)oxy)ethyl)benzene, 4-(4-methyl-3-pentenyl)cyclohex-3-ene-1-carbaldehyde, 3-(4-methyl-3-pentenyl)cyclohex-3-ene-1-carbaldehyde), Firneedle, 3-(1,3-benzodioxol-5-yl)-2-methylpropanol, α-ionone, β-ionone, tricyclo[5.2.1.0 2,6]dec-4-en-8-yl ethanoate, Jasmopyrane forte, 1-methoxy-4-(2-propenyl)-benzene, 2-(1,1-dimethylethyl)cyclohexyl ethanoate), PTBCHA, 2.4- dimethyl-4-phenyltetrahydrofuran, 4-Methyl-2-(2-methylprop-1-enyl)tetrahydropyran, Rosemary Tunisian, 3,6-dihydro-2-phenyl-4-methyl-2H-pyran, Terpinolene extra, Tetrahydro linalol, Thyme white, Ti-tree pure, and Undecalactone gamma.

The invention also provides a cosmetic method for reducing or preventing body malodour by topically applying to human skin a perfume composition comprising at least 30% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%.

The invention also provides a deodorant product comprising a perfume composition defined herein.

The invention also provides the use of a perfume composition, comprising at least 30% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%, to reduce body malodour.

The invention still further provides the use of a deodorant product, comprising a perfume composition which comprises at least 30% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%, to reduce body malodour.

Coryneform is a designation of a large ill-defined group of bacteria. The diverse genera that have been included with the coryneforms include Actinomyces, Arachnia, Arcanobacterium, Arthrobacter, bacterionema, Bifidobacterium, Brevibacterium, Cellulomonas, Corynebacterium, Eyrsipelothrix, Eubacterium, Kurthia, Listeria, Mycobacterium, Nocardia, Oerskovia, Propionibacterium, Rhodococcus and Rothia.

The term "perfume component" is used herein to represent a material which is added to a perfume to contribute to the olfactive properties of the perfume. A perfume component can be acceptably employed to provide odour contributions to the overall hedonic performance of products. Typically, a perfume component will be generally recognised as possessing odours in its own right, will be relatively volatile and often has a molecular weight within the range 100 to 300. Typical materials which are perfume components are described in "Perfume and Flavour Chemicals", Volumes I and II (Steffan Arctander, 1969). A perfume composition will contain a number of individual perfume components, and optionally a suitable diluent. The concentration of perfume components referred to herein is relative to the total concentration of perfume components present in the composition, ie excludes any diluent.

The perfume composition according to the present invention preferably comprises at least 40%, more preferably at least 50%, particularly at least 60%, and especially at least 70% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria, preferably for Corynebacteria xerosis as measured in Example 1 below, of greater than 0.1%. The preferred perfume components preferably have an MIC greater than 0.25%, more preferably geater than 0.5%, and also suitably have an MIC of less than 10%, preferably less than 5%, more preferably less than 3%, particularly less than 2%, and especially less than 1%.

The preferred perfume components have been shown to be capable of a significant deodorant action when used at concentrations below their MIC for coryneform bacteria. The preferred components may be added to other perfume components to deliver perfumes with the desired deodorant and hedonistic properties. The perfume composition suitably comprises up to 70%, preferably up to 60%, more preferably up to 50%, particularly up to 40%, and especially up to 30% by weight of perfume components having an MIC for coryneform bacteria outside of the above preferred ranges. A perfume composition according to the present invention surprisingly provides a perfume with high deodorant activity, but measurably lower anti-microbial effects, particularly against coryneform bacteria. The perfume composition preferably provides deodorant activity without killing significant numbers of the coryneform bacteria, and/or other types of skin bacteria.

A preferred perfume composition yields, an Odour Reduction Value, measured as described in Example 3, of at least 10%, more preferably at least 30%, and particularly at least 50%.

A perfume composition according to present invention may be used in deodorant products which include body deodorants and antiperspirants such as roll ons, gel products, stick deodorants, antiperspirants, shampoos, soaps, shower gels, talcum powder, hand creams, skin conditioners, sunscreens, sun tan lotions, skin and hair conditioners. The

perfume composition may also be used in other product areas to deliver a degree of deodorant protection, for example in laundry and household products such as rinse conditioners, household cleaners and detergent cleaners. The provision of deodorant protection may also be provided in textiles themselves by the incorporation of these perfume compositions during production, using techniques known in the art. A deodorant product preferably comprises at least 0.05% to 4%, more preferably 0.1% to 2% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%, more preferably selected from the list below.

Suitable perfume components, for use in a perfume composition according to the present invention, include the following materials.

Acetyl di iso amylene ((Z)-3,4,5,6,6-pentamethylhept-3-en-2-one)
Adoxal (2,6,10-trimethylundec-9-enal)
Anethole synthetic (1-(4-Methoxyphenyl)-1-propene)
Azarbre (mixture of diethyl and dimethylcyclohex-2-en-1-one)
Basil comores
Carvone laevo (2-methyl-5-(1-methyl-1-ethenyl)-2-cyclohexen-1-one)
Cis-3-hexenyl salicylate
Cistulate (methyl 3,3-dimethylbicyclo(2.2.1)heptane-2-carboxylate)
Citronellol
Corriander
Cyclamen aldehyde (2-methyl-3-(4-(1-methylethyl)phenyl)propanal)
Damascenone (1-(2,6,6-trimethyl-1,3-cyclohexadienyl)-2-buten-1-one)
Dihydrojasmone
Dimethyl Benzyl Carbinyl acetate (alpha,alpha-Dimethylphenylethylacetate)
Dimethyl anthranilate
Efetaal (1-(2-((1-(ethyloxy)ethyl)oxy)ethyl)benzene)
Empetaal (mixture of 4-(4-methyl-3-pentenyl)cyclohex-3-ene-1-carbaldehyde) and
3-(4-methyl-3-pentenyl)cyclohex-3-ene-1-carbaldehyde))
Fir needle
Helional (3-(1,3-benzodioxol-5-yl)-2-methylpropanol)
Ionone (mixture of α and β isomers)
Jasmacyclene (tricyclo[5.2.1.0 2,6]dec-4-en-8-yl ethanoate)
Jasmopyrane forte
Methyl chavicol (1-methoxy-4-(2-propenyl)-benzene)
Ortholate (2-(1,1-dimethylethyl)cyclohexyl ethanoate)
PTBCHA
Rhubafuran (2,4-dimethyl-4-phenyltetrahydrofuran)

Rose Oxide Racemic (4 -Methyl -2 - (2 - methylprop -1-enyl)tetrahydropyran)

Rosemary Tunisian

Rosyrane (3.6-dihydro-2-phenyl-4-methyl-2H-pyran)

Terpinolene extra

Tetrahydro linalol

Thyme white

Ti-tree pure

Undecalactone gamma

A preferred perfume composition comprises at least 5, more preferably at least 10, and particularly at least 18 of the above perfume components.

The invention is illustrated by the following examples.

EXAMPLE 1

Standard assessment of MIC

A fresh culture of the test inoculum (Corynebacteria xerosis NCTC 7243 (National Collection of Type Cultures, Public Health Laboratory Service, Central Public Health Laboratory , 61 Colindale Avenue, London)) (redeposited on 22 July 1999 under the Budapest Treaty as NCIMB 41021 (National Collections of Industrial and Marine Bacteria Ltd, 23 St Machar Drive, Aberdeen Scotland) diluted in sterile 0.1% special peptone solution to give a concentration of approximately 10^6 cfu/ml was prepared.

Test samples were diluted in sterile trptone soya broth (TSB) Each row of the microtitre plate (labelled A - H) was allocated to one sample, i.e. eight samples per plate. Row 8 (H) contained only TSB for use as a bacterial control to indicate level of turbidity in the absence of test material. Aseptically 200 µl of the initial dilution was transferred to the 1st and 7th well of the appropriate row. All other test wells were filled with 100 µl of sterile TSB using an 8 channel pipette. The contents of all wells in column 1 were mixed by sucking samples up and down pipette tips before 100 µl was transferred to column 2. The same sterile pipette tips can be used to transfer 100 µl of each well in column 7 in to the appropriate well in column 8. Tips were discarded into disinfectant solution. Using fresh sterile tips the process was repeated by transferring 100 µl from column 2 into column 3 (and 8 into 9). The process was continued until all wells in columns 6 and 12 contained 200 µl. After mixing 100 µl was discarded from wells in these columns to waste.

To all wells 100 µl of pre-diluted test culture was added giving 200 µl final volume in each well.

A blank plate was prepared for each set of samples using the above protocol except 100 µl of sterile 0.1% peptone was added instead of bacterial culture.

Plates were sealed using autoclave tape and incubated overnight at 35° C.

The reader was preset to gently agitate the plates to mix the contents before reading

absorbance at 540 nm. The control plate for each set of samples was read first. The reader was then reprogrammed to use the control readings to blank all other plate readings of the set of test materials (i.e. removing turbidity due to perfume and possible colour changes during incubation) thus only printing out absorbances due to turbidity resulting from bacterial growth. Limits were set so that degrees of turbidity were given a rating.

The MIC was taken as the level of sample required to inhibit growth completely (change in absorbance < 0.2).

EXAMPLE 2

Perfume Formulations

Ingredient	% by Weight	
	Perfume X	Perfume Y
Acetyl di iso amylene	7	5.8
Adoxal		0.4
Amberlyn super PM577	4	
Azarbre	4	
Benzyl acetate extra	8	6.7
Benzyl salicylate	6.5	9.7
Cassis base 345 AB2967		4.2
Cis-3-hexenyl salicylate		2.5
Citral lemarome		0.7
Citronellol pure		14.2
Cyclamen aldehyde		4.2
Dihydro Eugenol	1.5	
Dihydro Jasmone	0.7	
Dimethyl benzyl carbinyl acetate	3	
Diphenyl methane	2	
Dupical		0.4
Empetal	0.4	0.5

	Perfume X	Perfume Y
Geraniol pure	7	8
Helional		4.2
Ionone	12.5	
Jasmacyclene	2.2	2.5
Ligustral	0.3	
Ligustral 10% DPG AA 1486	2.5	
Lyral	8	12.5
Methyl iso eugenol	4	
Methyl octyl acetaldehyde 10% DPG		1.7
Orange terpenes		0.3
Ortholate		6.7
Para cresyl methyl ether	0.4	
Para tert butyl cyclo hexyl acetate	10	
Phenyl ethyl alcohol	10	10.6
Roseacetone	6	10.6

Perfume Z	
Ingredient	% by weight
Adoxal DEP AA022	4
Benzyl acetate extra	7.5
Benzyl salicylate	8
Cardamon ceylon A pure	2
Cassis base 345 AB 2967	2
Cis 3 hexenyl salicylate	5
Citronellol pure	12
Cyclamen aldehyde	2
Dimethyl Benzyl Carbinyl Acetate	2
Geraniol pure	8

Helional	2
Ionone	6
Ligustral	0.3
Lily aldehyde	6
Lyral	10
Mandarinal 32048 SAE	4
Methyl iso eugenol	3
methyl octyl acetaldehyde	2.8
ortholate	3
Para cresyl methyl ether	0.4
Phenyl ethyl alcohol	5
Rosacetone	5

EXAMPLE 3

The following are typical formulations of deodorant products which are made by methods common in the art.

Deodorant Sticks

Ingredient	Content (% by weight)	
	Formulation 1A	Formulation 1B
Ethanol		8
Sodium Stearate	7	6
Propylene glycol	70	12
Perfume	1.5	2
PPG-3 Myristyl ether		28
PPG-10 Cetyl ether		10
Clyclomethicone		34
Silica		
Water	21.5	

Aerosols

Ingredient	content (% by weight)	
	Formulation 2A	Formulation 2B
Ethanol B	up to 100	
Propylene glycol	as required	
Perfume	2.5	1.5
Chlorhydrol microdry		31.8
Silicone Fluid DC344		up to 100
Bentone gel IPP		13.65
Irgasan DP300	0.03	
Dimethyl ether	20	
Concentrate		22
Water	23	

Roll ons

Ingredient	Content (% by weight)	
	Formulation 3A	Formulation 3B
Ethanol	to 100%	60
Klucel MF		0.65
Cremphor RM410		0.5
erfume	0.5	1
AZTC *	20	
Clyclomethicone	68	
Dimethicone	5	
Silica	2.5	
Water		37.85

* Aluminium zirconium tetrachlorohydro glycinate

The three perfume compositions of Example 2 were made and tested for deodorant action in an underarm product, using an Odour Reduction Value test generally as described in US-A-4278658, but with the substitution of the perfumed soap by perfumed roll-on product, using the formulation described in Formulation 3B.

The Odour Reduction Value test was carried out using a panel of 40 Caucasian male subjects. A standard quantity (approximately 0.4g) of a roll-on product containing one of the perfume compositions or an unperfumed control was applied to the axillae of the panel members in accordance with a statistical design.

After a period of five hours the axillary odour was judged by three trained female assessors who scored the odour intensity on the 0 to 5 scale, as shown below

Score	Odour level	Conc. of aqueous isovaleric acid (ml/l)
0	No odour	0
1	Slight	0.013
2	Definite	0.053
3	Moderate	0.22
4	Strong	0.87
5	Very Strong	3.57

Average scores for each test product and the control product were then determined and the score for each test product was subtracted from the score for the control product to give the Odour Reduction Value.

Average panel score perfume Y	1.67
Control panel score	2.41
Odour Reduction Value perfume	0.74
Odour Reduction Value as percentage of control score	31%
Difference for significance @95% 0.24 Difference for significance @99% 0.32	

Average panel score perfume X	1.91
Control panel score	2.41

Odour Reduction Value perfume	0.5
Odour Reduction Value as percentage of control score	21%

Difference for significance @95% 0.24

Difference for significance @99% 0.32

Average panel score perfume Z	2.05
Control panel score	2.41
Odour Reduction Value perfume	0.36
Odour Reduction Value as percentage of control score	15%

Difference for significance @95% 0.24

Difference for significance @99% 0.32

The perfume composition referred to as X and Y had at least 40% by weight of specific perfume components listed on page 4 above, present, whilst the perfume referred to as Z had at least 30% of such components. Perfume X contained 40%, Y 41%, and Z 34% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%.

CLAIMS

1 A perfume composition comprising at least 30% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%.

2. A perfume composition according to claim 1 wherein at least 30% by weight of the perfume components have a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.25%, and preferably less than 10%.

3. A perfume composition comprising at least 30% by weight of one or more of the following perfume components;

(Z)-3,4,5,6,6-pentamethylhept-3-en-2-one, 2,6,10-trimethylundec-9-enal, 1-(4-Methoxy phenyl)-1-propene, diethylcyclohex-2-en-1-one, dimethylcyclohex-2-en-1-one, Basil comores, 2-methyl-5-(1-methyl-1-ethenyl)-2-cyclohexen-1-one, Cis-3-hexenyl salicylate, methyl 3,3-dimethylbicyclo(2.2.1)heptane-2-carboxylate, Citronellol, Corriander, 2-methyl-3-(4-(1-methylethyl)phenyl)propanal, 1-(2,6,6-trimethyl-1,3-cyclohexadienyl)-2-buten-1-one, Dihydrojasmone, alpha,alpha-Dimethylphenylethylacetate, Dimethyl anthranilate, 1-(2-((1-(ethyloxy)ethyl)oxy)ethyl)benzene, 4-(4-methyl-3-pentenyl) cyclohex-3-ene-1-carbaldehyde, 3-(4-methyl-3-pentenyl)cyclohex-3-ene-1-carbaldehyde), Fir needle, 3-(1,3-benzodioxol-5-yl)-2-methylpropanol, α-ionone, β-ionone , tricyclo[5.2.1.0 2,6]dec-4-en-8-yl ethanoate, Jasmopyrane forte, 1-methoxy-4-(2-propenyl)-benzene, 2-(1,1-dimethylethyl)cyclohexyl ethanoate), PTBCHA, 2,4-dimethyl-4-phenyltetrahydrofuran, 4 -Methyl -2 - (2 - methylprop -1-enyl)tetrahydropyran, Rosemary Tunisian, 3,6-dihydro-2-phenyl-4-methyl-2H-pyran, Terpinolene extra, Tetrahydro linalol, Thyme white, Ti-tree pure, and Undecalactone gamma.

4. A perfume composition according to claim 1 comprising at least 30% by weight of one or more of the perfume components listed in claim 3.

5. A perfume composition according to any one of the preceding claims which yields an Odour Reduction Value of at least 10%.

6. A cosmetic method for reducing or preventing body malodour by topically applying to human skin a perfume composition comprising at least 30% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%.

7. A method according to claim 6 wherein the perfume composition comprises at least 30% by weight of one or more of the perfume components listed in claim 3.

8. A method according to either one of claims 6 and 7 wherein the biotransformation, preferably by coryneform bacteria, of organic molecules present in human sweat is diminished sub-lethally.

9. A deodorant product comprising a perfume composition defined in claim 1 and/or in

claim 3.

10. The use of a perfume composition, comprising at least 30% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%, to reduce body malodour.

11. The use of a deodorant product, comprising a perfume composition which comprises at least 30% by weight of perfume components having a minimum inhibitory concentration (MIC) for coryneform bacteria of greater than 0.1%, to reduce body malodour.

12. A perfume composition comprising at least 30% by weight of one or more of the following perfume components;
(Z)-3,4,5,6,6-pentamethylhept-3-en-2-one, 2,6,10-trimethylundec-9-enal, 1-(4-Methoxyphenyl)-1-propene, diethylcyclohex-2-en-1-one, dimethylcyclohex-2-en-1-one, Basil comores, 2-methyl-5-(1-methyl-1-ethenyl)-2-cyclohexen-1-one, Cis-3-hexenyl salicylate, methyl 3,3-dimethylbicyclo(2.2.1)heptane-2-carboxylate, 2-methyl-3-(4-(1-methylethyl)phenyl)propanal, 1-(2,6,6-trimethyl-1,3-cyclohexadienyl)-2-buten-1-one, Dihydrojasmone, alpha,alpha-Dimethylphenylethylacetate, Dimethyl anthranilate, 1-(2-((1-(ethyloxy)ethyl)oxy)ethyl)benzene, 4-(4-methyl-3-pentenyl) cyclohex-3-ene-1-carbaldehyde, 3-(4-methyl-3-pentenyl)cyclohex-3-ene-1-carbaldehyde), Fir needle, 3-(1,3-benzodioxol-5-yl)-2-methylpropanol, α-ionone, β-ionone, tricyclo[5.2.1.0 2,6]dec-4-en-8-yl ethanoate, Jasmopyrane forte, 1-methoxy-4-(2-propenyl)-benzene, 2-(1,1-dimethylethyl)cyclohexyl ethanoate), PTBCHA, 2,4-dimethyl-4-phenyltetrahydrofuran, 4-Methyl-2-(2-methylprop-1-enyl)tetrahydropyran, Rosemary Tunisian, 3,6-dihydro-2-phenyl-4-methyl-2H-pyran, Terpinolene extra, Tetrahydro linalol, Thyme white, Ti-tree pure, and Undecalactone gamma.

13. A perfume composition comprising at least 50% by weight of one or more of the following perfume components;
(Z)-3,4,5,6,6-pentamethylhept-3-en-2-one, 2,6,10-trimethylundec-9-enal, 1-(4-Methoxyphenyl)-1-propene, diethylcyclohex-2-en-1-one, dimethylcyclohex-2-en-1-one, Basil comores, 2-methyl-5-(1-methyl-1-ethenyl)-2-cyclohexen-1-one, Cis-3-hexenyl salicylate, methyl 3,3-dimethylbicyclo(2.2.1)heptane-2-carboxylate, Citronellol, 2-methyl-3-(4-(1-methylethyl)phenyl)propanal, 1-(2,6,6-trimethyl-1,3-cyclohexadienyl)-2-buten-1-one, Dihydrojasmone, alpha,alpha-Dimethylphenylethylacetate, Dimethyl anthranilate, 1-(2-((1-(ethyloxy)ethyl)oxy)ethyl)benzene, 4-(4-methyl-3-pentenyl) cyclohex-3-ene-1-carbaldehyde, 3-(4-methyl-3-pentenyl)cyclohex-3-ene-1-carbaldehyde), Fir needle, 3-(1,3-benzodioxol-5-yl)-2-methylpropanol, α-ionone, β-ionone, tricyclo[5.2.1.0 2,6]dec-4-en-8-yl ethanoate, Jasmopyrane forte, 1-methoxy-4-(2-propenyl)-benzene, 2-(1,1-dimethylethyl)cyclohexyl ethanoate), PTBCHA, 2,4-dimethyl-4-phenyltetrahydrofuran, 4-Methyl-2-(2-methylprop-1-

AMENDED SHEET

enyl)tetrahydropyran, Rosemary Tunisian, 3,6-dihydro-2-phenyl-4-methyl-2H-pyran, Terpinolene extra, Tetrahydro linalol, Thyme white, Ti-tree pure, and Undecalactone gamma.

14. A perfume composition comprising at least 30% by weight of at least 5 of the following perfume components;

(Z)-3,4,5,6,6-pentamethylhept-3-en-2-one, 2,6,10-trimethylundec-9-enal, 1-(4-Methoxyphenyl)-1-propene, diethylcyclohex-2-en-1-one, dimethylcyclohex-2-en-1-one, Basil comores, 2-methyl-5-(1-methyl-1-ethenyl)-2-cyclohexen-1-one, Cis-3-hexenyl salicylate, methyl 3,3-dimethylbicyclo(2.2.1)heptane-2-carboxylate, Citronellol, Corriander, 2-methyl-3-(4-(1-methylethyl)phenyl)propanal, 1-(2,6,6-trimethyl-1,3-cyclohexadienyl)-2-buten-1-one, Dihydrojasmone, alpha,alpha-Dimethylphenylethylacetate, Dimethyl anthranilate, 1-(2-((1-(ethyloxy)ethyl)oxy)ethyl)benzene, 4-(4-methyl-3-pentenyl) cyclohex-3-ene-1-carbaldehyde, 3-(4-methyl-3-pentenyl)cyclohex-3-ene-1-carbaldehyde), Fir needle, 3-(1,3-benzodioxol-5-yl)-2-methylpropanol, α-ionone, β-ionone, tricyclo[5.2.1.0 2,6]dec-4-en-8-yl ethanoate, Jasmopyrane forte, 1-methoxy-4-(2-propenyl)-benzene, 2-(1,1-dimethylethyl)cyclohexyl ethanoate), PTBCHA, 2,4-dimethyl-4-phenyltetrahydrofuran, 4-Methyl-2-(2-methylprop-1-enyl)tetrahydropyran, Rosemary Tunisian, 3,6-dihydro-2-phenyl-4-methyl-2H-pyran, Terpinolene extra, Tetrahydro linalol, Thyme white, Ti-tree pure, and Undecalactone gamma.

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FOR UTILITY/DESIGN
CIP/PCT NATIONAL/PLANT
ORIGINAL/SUBSTITUTE/SUPPLEMENTAL
DECLARATIONS

RULE 63 (37 C.F.R. 1.63) DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PM & S FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the **INVENTION ENTITLED : PERFUME COMPOSITION**

the specification of which (CHECK applicable BOX(ES))

X A. ☐ is attached hereto.

BOX(ES) → B. ☐ was filed on _____ as U.S. Application No. _____/_____

→ → C. ☐ was filed as PCT International Application No. PCT/ _____/_____ on _____

and (if applicable to U.S. or PCT application) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. Except as noted below, I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International Application which designated at least one other country than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT International Application, filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S) Number	Country	Day/MONTH/Year Filed	Date first Laid-open or Published	Date Patented or Granted	Priority NOT Claimed
9814648.3	Great Britain	07/July/1998			

If more prior foreign applications, X box *at bottom* and continue on attached page.

Except as noted below, I hereby claim domestic priority benefit under 35 U.S.C. 119(e) or 120 and/or 365(c) of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S) Application No. (series code/serial no.)	Day/MONTH/Year Filed	Status pending, abandoned, patented	Priority NOT Claimed
PCT/GB99/02013	07/July/1999		

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint Pillsbury Madison & Sutro LLP, Intellectual Property Group, 1100 New York Avenue, N.W., Ninth Floor, East Tower, Washington, D.C. 20005-3918, telephone number (202) 861-3000 (to whom all communications are to be directed), and the below-named persons (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete names/numbers below of persons no longer with their firm and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or a below attorney in writing to the contrary.

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"X" box ☒ FOR ADDITIONAL INVENTORS, and proceed on the attached page to list each additional inventor.

☐ See additional foreign priorities on attached page (incorporated herein by reference).

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(M#)

DECLARATION AND POWER OF ATTORNEY
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